Sheep persistently infected with Border disease readily transmit virus to calves seronegative to BVD virus

Braun, Ueli ; Reichle, S F ; Reichert, C ; Hässig, Michael ; Stalder, H P ; Bachofen, Claudia ; Peterhans, E

Abstract: Bovine viral diarrhea- and Border disease viruses of sheep belong to the highly diverse genus pestivirus of the Flaviviridae. Ruminant pestiviruses may infect a wide range of domestic and wild cloven-hooved mammals (artiodactyla). Due to its economic importance, programs to eradicate bovine viral diarrhea are a high priority in the cattle industry. By contrast, Border disease is not a target of eradication, although the Border disease virus is known to be capable of also infecting cattle. In this work, we compared single dose experimental inoculation of calves with Border disease virus with co-mingling of calves with sheep persistently infected with this virus. As indicated by seroconversion, infection was achieved only in one out of seven calves with a dose of Border disease virus that was previously shown to be successful in calves inoculated with BVD virus. By contrast, all calves kept together with persistently infected sheep readily became infected with Border disease virus. The ease of viral transmission from sheep to cattle and the antigenic similarity of bovine and ovine pestiviruses may become a problem for demonstrating freedom of BVD by serology in the cattle population.

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Braun et al., Figure 1